EXHIBIT A

AMEND THE UNIFIED DEVELOPMENT ORDINANCE (UDO) ARTICLES 6, 13, 14 AND APPENDIX TO INCORPORATE NEW TEXT:

Article 6 Use Regulations

Section 6.2 Use Table

Delete the Wind Apparatus category and add the following:

Use Category	Use Types	Residential	Nonresidential	Use Standard
Wind energy facilities, Small	Building-Mounted	P	P	
	Tower-Mounted[1]	P	P	
Wind energy facilities, Large		C	C	

[1]The following Tower-Mounted small wind energy facility proposals on residentially used or zoned parcels shall require a Conditional Use Permit: a) Facilities above 45 feet on parcels less than 40,000 square feet, b) Facilities above 75 feet on parcels 40,000 to 200,000 square feet, and c) Facilities above 100 feet on parcels greater than 200,000 square feet.

Section 6.3 Use Standards

6.3.44 Large Wind Energy Facilities

Large wind energy facilities consist of one or more wind turbines measuring higher than 175 feet from the base of the tower to the tip of the fully extended blade. Such facilities include electronic conversion and distribution systems. The minimum parcel size for a large wind facility shall be 200,000 square feet.

6.3.44.1 Height and Setbacks

a. Height

1. Large turbine shall be permitted up to a height of 400 feet, or other height as specified as a condition of the Conditional Use Permit, as measured from the base of the tower to the top of a fully extended blade. The facility height shall be further limited to 125 feet if located within 500 feet of a nonparticipating property that is residentially zoned or used.

2. The minimum clearance under a large turbine shall be 50 feet as measured from the lowest point of the blades to the ground directly below.

b. Setbacks

1. Large turbines shall be set back a minimum distance equal to 150 percent of (or 1.5 times) the facility height, to all property lines, third party transmission lines, and communication towers.

2. Large turbines shall be set back a minimum distance equal to 110 percent of the facility height from any other facilities.

6.3.44.2 Operating Requirements

The following are requirements for the operation of large wind facilities. Additional requirements and standards for large wind energy facilities shall apply as identified in Appendix Q. Provisions for violations, penalties and enforcement shall apply as identified under Section 13.9.

a. Sound Level Limitations

Receiving Property (within 500 feet)	Hours of Operation	Sound Level limits [1,2,3]
Residential	10:00 pm – 7:00 am	45 dB(A)
Residential	7:00 am – 10:00 pm	55 dB(A)
Other Non-Residential		60 dB(A)
Industrial		65 dB(A)

1. 5 dB shall be added to the average sound level reading from a facility as a penalty when its sound emissions have an adverse character, such as having prominent tonal (e.g. humming) or modulating (e.g. swooshing) sounds.
2. No facility shall operate with an average sound level more than 5 dB(A) above the non-operational ambient level, as measured within any neighboring property that is residentially zoned or used.
3. To limit the level of low-frequency sound, the average C-weighted sound level during facility operation shall not exceed the A-weighted ambient sound level by more than 20 dB.

b. Shadow Flicker

The facility shall be sited so as not to produce shadow flicker on any residential dwelling, or fall within 50 feet of a dwelling for more than 50 hours a year, on a property that is residentially zoned or used at the time of approval. Alternatively, the owner must commit to a schedule for turning the affected turbines off during affected periods.

c. Color and Sun Glint

Large turbines, towers and blades shall be finished in off-white, light gray, or other neutral color, as approved in the Conditional Use Permit. The finish shall be flat or matte, so as to reduce incidence of sun glint. However, de-icing materials that can give a high gloss appearance may be applied to the surface of the blades during winter weather conditions. The required coloration and finish shall be maintained throughout the life of the facility and may be changed.

d. Lighting

The facility shall not be artificially lighted, except as required by the Federal Aviation Administration (FAA) or necessary for workers involved in maintenance or repairs. Any required lighting shall be shielded so that no glare extends beyond the property line of the facility.

e. Electronic Interference

Facilities shall not cause electromagnetic interference to communications systems. All facilities shall utilize nonmetallic rotor blades unless the applicant can supply documentation from an independent testing laboratory certifying that any metallic blade rotor proposed to be used will not cause electromagnetic interference.

Section 6.4 Accessory Uses

6.4.13 Small Wind Energy Facilities

Small wind energy facilities, including building-mounted and tower-mounted turbines, are considered to be an accessory use to principle residential and nonresidential uses. It is permissible to sell excess energy from a small wind energy facility to the local electric utility company, provided that the majority of energy produced is intended to serve the principle use. Facilities over 175 feet in height or constructed as a principle use for energy production for wholesale or retail sale purposes shall require a Conditional Use Permit, as regulated under Sec. 6.3.44 for large wind energy facilities.

6.4.13.1 Height

a. Residential Zoning Districts

1. Building-mounted turbines shall be allowed at the height of 15 feet above the highest point of the building structure, but in no case shall exceed 45 feet above the structure's average ground elevation in a residential zoning district.

2. Tower-mounted turbines shall be permitted up to a height of 45 feet on parcels less than 40,000 square feet, 75 feet on parcels 40,000 to 200,000 square feet, and 125 feet on parcels larger than 200,000 square feet, as measured from the base of the tower to the top of a fully extended blade. Proposed tower-mounted facilities over these limits shall require a Conditional Use Permit.

3. The blade tip of a tower-mounted turbine shall have ground clearance of not less than 15 feet at its lowest point.

b. Nonresidential Zoning Districts

1. Building-mounted turbines shall be allowed at the height of 15 feet above the highest point of the building structure, in a nonresidential zoning district.

2. The facility height for a tower-mounted turbine (as measured at its highest point) shall be limited to a maximum of 175 feet in a nonresidential zoning district. Tower-mounted turbines shall be limited to 125 feet in height if located within 500 feet of a nonparticipating residentially zoned property.

3. The blade tip of a tower-mounted turbine shall have ground clearance of not less than 15 feet at its lowest point.

6.4.13.2 Setbacks

Tower-mounted turbines shall be set back a distance equal to 110%, or 1.1 times the facility height, from the tower base to all property lines, third party transmission lines,

and communication towers. Guy wires and tower anchoring systems shall not extend closer than 30 feet from the property line or public right-of-way.

6.4.13.3 Operating Requirements

The following are requirements for the operation of small wind facilities. Additional requirements and standards for small wind energy facilities shall apply as identified in Appendix Q. Provisions for violations, penalties and enforcement shall apply as identified under Section 13.9.

a. Sound Level Limitations for Small Wind Energy Facilities

Receiving Property (within 500 feet)	Hours of Operation	Sound Level limits [1,2,3]
Residential	10:00 pm – 7:00 am	45 dB(A)
Residential	7:00 am – 10:00 pm	55 dB(A)
Other Non-Residential		60 dB(A)
Industrial		65 dB(A)

1. 5 dB shall be added to the average sound level reading from a facility as a penalty when its sound emissions have an adverse character, such as having prominent tonal (e.g. humming) or modulating (e.g. swooshing) sounds.
2. No facility shall operate with an average sound level more than 5 dB(A) above the non-operational ambient level, as measured within any neighboring residentially zoned or used property.
3. To limit the level of low-frequency sound, the average C-weighted sound level during facility operation shall not exceed the A-weighted ambient sound level by more than 20 dB.

b. Shadow Flicker

The facility's shadow flicker shall not fall on any window of an existing residential dwelling of an abutting nonparticipating property.

c. Width

The width of a building-mounted turbine shall not exceed 20 percent of the width of the building's front elevation, for residential buildings and non-residential buildings abutting residentially used properties. The width of the building-mounted turbine shall not exceed 50 percent of the width of a non-residential building, not abutting residentially used properties.

d. Sun Glint

The facility's surface finish shall be flat or matte, so as to reduce incidence of sun glint. However, de-icing materials that can give a high gloss appearance may be applied to the surface of the blades during winter weather conditions.

e. Electronic Interference

Facilities shall not violate Federal Communication Commission (FCC) or other state or local laws by causing electromagnetic interference with communications systems.

f. Lighting

Facilities shall not be artificially lighted unless required by the Federal Aviation Administration (FAA) or other appropriate authority. Any required lighting shall be shielded so that no glare extends beyond the property line of the facility.

g. Maintenance and Complaints

1) Facilities shall be maintained according to operating requirements of this ordinance. Should a facility become inoperable, or should any part of the facility become damaged, or should the facility violate a permit condition, the owner shall cease operations immediately and remedy the condition promptly.
2) The owner shall promptly investigate any complaints of potential permit violations within 10 days.
3) The results of the investigation shall be provided to Lake County and the person making the complaint within 30 days of the complaint.

Article 13 Violations, Penalties and Enforcement

Section 13.9 Wind Energy Facilities

See Section 6.3.44 for information on Height and Setbacks and Operating Requirements for large wind facilities and Section 6.4.13 for information on Height and Setbacks and Operating Requirements for small wind facilities. See additional requirements and standards for wind energy facilities shall apply as identified in Appendix Q.

13.9.1 Remedies and Defaults

a. Should a wind energy facility become inoperable, or should any part of the facility become damaged or otherwise violate operating requirements as defined under Section 6.3.44.2 for large facilities, or Section 6.4.13.3 for small facilities, the owner shall cease operations immediately and remedy the condition promptly.
b. The owner must remedy the condition within 180 days of the issue date on written notice from Lake County or be considered to be in default and the facility considered to be abandoned.
c. A 30-day extension may be authorized by Planning Director.

13.9.2 Suspension and Decommissioning of Large Wind Facilities

a. If Lake County determines that the owner of a large wind facility cannot resolve the alleged default(s) within the good faith negotiation period identified above, Lake County shall suspend the Conditional Use Permit and the Decommissioning Plan shall be put into effect.
b. If the facility is not removed within 180 days of the finding of abandonment, Lake County may remove all structures at the owner's expense. In the case of such removal, Lake County has the right to file a lien for reimbursement, for any and all expenses incurred by the Lake County without limitation, including attorney fees and accrued interest.

13.9.3 Decommissioning of Small Wind Facilities

If the facility is not removed with 90 days of the finding of abandonment, Lake County may remove all structures at the owner's expense. In the case of such removal, Lake County has the right to file a lien for reimbursement, for any and all expenses incurred by the Lake County without limitation, including attorney fees and accrued interest.

Article 14 Definitions

Ambient Sound: The all-encompassing sound at a given location, usually a composite of sounds from many sources near and far. For the purpose of this ordinance, the "ambient sound level" shall mean the quiescent background level, that is, the quietest of ten 10-second average sound levels measured when there are no nearby or distinctly audible sound

sources (e.g., dogs, cars in line-of-sight, or jets). Daytime ambient measurements should be made during mid-morning, weekday hours while nighttime measurements should be made after midnight.

Low-Frequency Sound: Sound with frequencies below 100 Hz, including audible sound and infrasound, as opposed to broadband which has sound frequencies above 100 Hz. Infrasound has frequencies below 20 Hz, which if sufficiently intense, can be perceived by many individuals, and must be measured by a sound level meter using the C-weighted scale.

Noise: Sound that adversely affects the psychological or physiological well-being of people. Whereas sound is a disturbance or oscillation that propagates outwardly as acoustic waves through the air.

Participating Property: A property that is owned by the owner of the property on which the facility is proposed or installed.

Shadow Flicker: The on-and-off strobe light effect caused by the shadow of moving blades cast by the sun passing above the turbine. Shadow flicker intensity is defined as the difference or variation in brightness at a given location in the presence and absence of a shadow.

Sound Frequency: The number of oscillations per second in hertz (Hz). How we perceive sound is partly dependant on what the frequency is. High frequency sound has more oscillations per second, whereas low frequency sound has fewer.

Sound Level: The A-weighted sound pressure level in decibels (dB) (or the C-weighted level if specified) as measured using a sound level meter that meets the requirements of a Type 2 or better precision instrument according to ANSI S1.4. The "average" sound level is time-averaged over a 1-2 minute period, using an integrating sound level meter that meets the requirements of ANSI S12.43.

Sun Glint: The reflection of sunlight off of a surface, as in the case of the blades, tower, or other component of a wind energy facility.

Tower: A tall structure, mounted in the ground, on which a wind turbine is mounted.

Turbine: The parts of a wind energy facility including the blades, nacelle and tail.

(Wind Energy) Facility Height: The distance from the structure's average ground elevation to the highest point of the turbine, including the highest reach of the blades.

Appendix Q: Wind Energy Facilities

1.0 REQUIREMENTS FOR LARGE WIND ENERGY FACILITIES

See Section 6.3.44 Large Wind Facilities for information on Height and Setbacks and Operating Requirements. See Section 13.9 for Violations, Penalties and Enforcement. See 3.0 below in Appendix Q for Additional Standards for Wind Energy Facilities.

1.1 APPLICATION REQUIREMENTS

A. Project Proposals for large wind energy facilities shall include:

1) Name, company, address and phone number of owner and applicant
2) Photos of existing conditions for proposed facilities.
3) Project summary including the manufacturer information, number of proposed turbines, and proposed height to the top of the turbine, including tower height and length of the blades.
4) Evidence from a wind study that site is feasible location for large wind energy facilities.

B. Proposals shall include a site map or survey, drawn to scale by a Professional Engineer, indicating:

1) Existing and proposed contours, at a minimum of 2 foot intervals.
2) Location, setbacks, exterior dimensions and square footage of all structures on the owner's property.
3) Location of each of the turbines and the corresponding identification numbers.
4) Location of existing and planned meteorological (met) towers.
5) Location of proposed access roads.
6) Location and size of existing waterways, wetlands, floodplains, sanitary sewers, storm sewerage systems, and water distribution systems.
7) Location of any overhead power lines.

C. Stormwater and Drainage

1) The applicant/owner shall design and install all necessary stormwater facilities as required by the Lake County Watershed Development Ordinance and all other regulations pertaining to stormwater management.
2) The owner shall repair any and all field tiles or other drainage and stormwater structures damaged by the construction or installation of the facility at their own expense.
3) The owner shall maintain any and all drainage and stormwater systems on the subject property and keep them in good working order.

D. Wind Study and Meteorological (Met) Towers

1) Lake County may allow the construction and/or installation of a met tower for the sole purpose of collecting wind generation data.
2) The applicant shall provide summary documentation of research and study that clearly demonstrates that the site has sufficient wind resources to be economically beneficial.
3) Met towers shall be limited to no more than one per square quarter mile.
4) Met towers must be dismantled within 3 years of their installation.
5) The removal of the met towers shall coincide with the Decommissioning Plan.

E. Engineering Plans, Drawings, and Schematics

1) A detailed drawing of electrical components and installation details for the proposed facility, shall be provided as supplied by the manufacturer.
2) A Structural Engineer's seal shall accompany manufacturer's engineering specifications of the tower, turbine and foundation .
3) All facilities shall be designed to withstand a minimum wind velocity of 100 miles per hour, with an impact pressure of 40 pounds per square foot.
4) Each facility shall conform to applicable industry standards, including those of the American National Standards Institute (ANSI). Applicants shall submit certificates of design compliance that equipment manufacturers have obtained from Underwriters Laboratories (UL), National Renewable Energy Laboratories

(NREL), Det Norske Veritas (DNV), Germanischer Lloyd Wind Energie (GL), or an equivalent third party.

5) All electrical wires and lines connecting each of the facilities shall be installed underground.

F. Coordination with Local Fire Department

1) Facility operators shall provide emergency services access to the facility 24 hours a day, and all drives and access points shall remain unobstructed at all times.

2) The applicant shall submit a copy of the site plan to the local fire protection district.

3) Upon request by the local fire department, the owner shall cooperate with the local fire department to develop the fire department's emergency response plan.

4) Nothing in this section shall alleviate the need to comply with all other applicable fire, life safety and/or emergency response laws and regulations.

G. Insurance

1) The applicant shall provide proof of a current general liability policy covering bodily injury and property damage with limits of at least $1 million per occurrence and $1 million in the aggregate at the time of the Conditional Use Permit application and at the annual renewal.

2) The amount of coverage may be changed upon consultation with the State's Attorney's Office or other attorney representing Lake County.

H. Electric Utility

Approval letter from the local electric utility company must be provided with permit application.

I. Soil Studies

1) Provide manufacturer's specifications for the tower construction, indicating the soil conditions that will structurally support the facility.

2) A full soil boring/sampling analysis to a depth equal/greater than the actual foundation depth is required at each turbine location.

3) Towers shall be embedded in an approved concrete foundation, stamped by a licensed Illinois Structural Engineer.

J. Ambient Sound Level Study

1) The applicant shall provide a certified manufacturer's specifications of the sound emissions from similar turbines that specifically state the overall sound level as well as the 1/3-octave band levels measured in accordance with IEC 61400-11.

2) The applicant shall provide the expected maximum 1-minute averaged A- and C-weighted sound level at the nearest surrounding, nonparticipating, residentially zoned or used properties with all turbines operating.

3) The applicant shall provide the daytime and nighttime quiescent ambient sound levels at representative, non-participating residential properties adjacent to the proposed development as measured by an environmental acoustics expert (board certified by the Institute of Noise Control Engineering).

K. Shadow Flicker Study

Using available software, the applicant shall show calculated locations of shadow flicker caused by the facility and the expected duration in total number of hours per year of the flicker on nonparticipating residentially zoned or used properties within one half mile.

L. Lighting Plan

A lighting plan shall be developed to establish compliance with Federal Aviation Administration and with regulations prohibiting glare and light spillage, must be approved as part of the Conditional Use Permit. Security lighting and any emergency lighting must be approved as part of the CUP.

M. Wildlife Study

A thorough wildlife study must be provided with the application, as carried out by a qualified professional. In cases where the wildlife study indicates that it is likely that a protected natural resource may adversely affected by the proposed facility, Lake County shall consult with the IDNR in accordance with Title 17 Illinois Administrative Code Part 1075.

N. Complaint Hotline

1) The applicant shall establish a telephone number hotline for the general public to call with any complaints or questions.
2) The hotline number shall also be posted at the operations and maintenance center and the construction marshalling yard.
3) The owner shall operate the hotline during usual business hours, and shall have an answering recording service during other hours.

O. Decommissioning Plan

1) The applicant shall develop the Decommissioning Plan for the eventual removal of facility and met towers at the time of application. The Plan shall include:
   a) The triggering events for decommissioning the facility.
   b) Provisions for the removal of structures, debris and cabling, including those below the soil surface.
   c) Provisions for the restoration of the soil and vegetation to pre-construction conditions, referencing photos submitted at Project Proposal.
   d) Estimate of the decommissioning costs, certified by a Professional Engineer.
   e) Financial Assurance, secured by the owner, for the purpose of adequately performing decommissioning, in an amount equal to the Professional Engineer's certified estimate of the decommissioning costs.
   f) Procedures for Lake County access to Financial Assurances. V
   g) Acknowledgement that Lake County shall have the right to access to the site, pursuant to reasonable notice, in order to affect or complete decommissioning of the facility.
   h) Acknowledgment that procedures under 1.2 Roads and Transportation Access below will assure that impact on roads is addressed during the decommissioning process.
2) The terms of the Decommissioning Plan shall be binding upon the owner and any of their successors, assigns, or heirs.

1.2 ROADS AND TRANSPORTATION ACCESS

The applicant, as a condition of use of any public road(s), for the purpose of transporting parts and/or equipment for construction, operation, or maintenance of the large wind energy facilities or substation(s), shall comply with the following, as required by the appropriate highway authority, be it the Illinois Department of Transportation, Lake County Division of Transportation, township or municipality.

A. Preliminary Submittals

1) The application shall provide a map showing a proposed traffic control plan to be used for the duration of the project, including sufficient information about the signs to be installed and maintained throughout the project.

2) All designated routes shall be documented for their current condition using a video camera. Video recording will be done by the applicant to the satisfaction of the appropriate highway authority, which shall be given a copy of said video. To determine the condition of the roads following the completion of the project, and to determine if damage beyond the normal rate of deterioration has occurred to the designated routes, the designated routes will be inspected by the appropriate highway authority at project completion.

3) Based upon the review of the proposed routes and the susceptibility of the designated routes to damage, a corporate surety bond or irrevocable letter of credit will be required to insure the repairs to the damaged portions of the roads will be completed and to insure the post project road improvements are made to the satisfaction of the appropriate highway authority. The amount of the surety bond or irrevocable letter of credit for this project shall be determined by the appropriate highway authority, based on the potential amount of damage and/or repair of the highway.

4) Upon selection of a contractor and prior to beginning construction, the applicant and his/her contractor shall coordinate non-oversized material delivery routes with the appropriate highway authorities.

5) The applicant shall provide plans to each appropriate road authority for any improvements that need to be made to the road network to accommodate the project. These plans must be approved by the road authority(ies) prior to the commencement of construction. The applicant shall be responsible for the construction and/or maintenance of said improvements for the duration of the project. Upon completion of the project all said road improvements shall become the property of the road authority.

B. Highway/Road Permits

1) Oversized Load Permits. The applicant shall obtain all necessary oversized load permits from the appropriate road authority prior to the use of the road network by such loads.

2) Utility Permits. The applicant shall obtain all necessary utility permits from the appropriate authorities. All utility installations for the project shall be accurately shown on a construction drawing prior to construction. This drawing will be submitted to each appropriate highway authority for review and acceptance prior to installation of the utility. The appropriate highway authority shall be notified at least 2 business days prior to beginning any work within the right-of-way for each installation location. No open cuts of roadway surfaces will be allowed. The applicant or its contractor(s) shall be responsible for all traffic control devices related to any road closures, following approval by the appropriate highway authority.

3) Driveway Access Permits. All new entrances proposed will also require the issuance of a Driveway Access Permit which will be issued by LCDOT or

appropriate road authority. Although not all permits have to be obtained before any construction begins, individual permits must be obtained before beginning the construction of those individual access locations.

C. General Transportation Requirements

1) While the project is under construction, the maintenance of the roads and all construction traffic control devices shall be the responsibility of the applicant. The applicant shall provide the name and phone number of a contact person who shall be responsible for responding immediately to any maintenance needs of either the road or the traffic control devices. The applicant is responsible for having sufficient and appropriate equipment available at all times to be used for maintenance activities. While it is not necessary that the equipment be on site, it must be available within a 2 hour period.

2) The applicant and contractors shall abide by all posted weight limits unless permission is granted to do otherwise. All over weight loads shall obtain permission and/or permits from the appropriate road authorities prior to use of the road network.

3) Construction will not be allowed to begin until all traffic control devices have been installed in accordance with the approved plan.

4) The applicant will be responsible for completing the permit process.

D. Maintenance

1) The applicant shall be responsible for the maintenance of roads, including asphalt patching and shoulder maintenance during construction.

2) Should the applicant not respond to a required maintenance request within 2 hours, the appropriate highway authority is permitted to perform the maintenance, and the applicant will reimburse the highway authority for 100% of their cost of performing such maintenance. Should the applicant not make reimbursement to the highway authority, upon receipt of a written reimbursement request for the cost of said maintenance within 30 days, no further permits will be granted until such reimbursement is received by the highway authority.

E. Project Completion

1) As soon as the construction activity has been completed on the entire project, the applicant shall contact the appropriate highway authority(ies) to notify that the road(s) will no longer be needed for any material hauling or delivery of equipment. The highway authority(ies) will then proceed to evaluate the condition of the road as soon as possible following the notification. The highway authority(ies) will then notify the applicant of any sections of the road or right-of-way that have been damaged and that need to be repaired.

2) With every effort being made to keep construction traffic on designated routes, it is acknowledged that with the volume of construction traffic involved, construction traffic may have sporadically used non-designated routes. With this in mind, the applicant shall be responsible for repairs to any roads used in such a manner. The appropriate road authority shall determine which roads are affected and which repairs are needed.

1.3 REPORTING REQUIREMENTS

A. Complaint Log

1) The owner shall log each complaint or call made to the hotline, identifying the name, address and reason for the call.
2) The owner shall notify Lake County Planning, Building and Development of any complaints within the next two business days.

B. Quarterly Reports

1) The owner shall keep a Quarterly Report, at the owner's expense and in coordination with Lake County.
2) The Quarterly Report shall summarize the operation and maintenance.

C. Periodic Review

1) Complaint Logs and Quarterly Reports shall be provided to Lake County, as part of the periodic review of the Conditional Use Permit.
2) Complaint Logs and Quarterly Reports must be made available, as reasonably requested by Lake County.

2.0 REQUIREMENTS FOR SMALL WIND ENERGY FACILITIES

See Section 6.4.13 Small Wind Energy Facilities for information on Height and Setbacks and Operating Requirements. See Section 13.9 for Violations, Penalties and Enforcement. See 3.0 below in Appendix Q for Additional Standards for Wind Energy Facilities.

2.1 BUILDING PERMIT APPLICATION REQUIREMENTS

A. Project Proposal

1) Owner name, address and phone number.
2) Photos of existing conditions for proposed facility.
3) Project summary including the manufacturer information, number of proposed turbines, and proposed height to the top of the turbine, including tower height and length of the blades.

B. Site Plan (drawn to scale)

1) Existing and proposed contours, at a minimum of two foot intervals.
2) Location, setbacks, exterior dimensions and square footage of all structures on the owner's property and abutting properties within 100 feet.
3) Location and size of existing waterways, wetlands, one hundred-year floodplains, sanitary sewers, storm sewer systems, and water distribution systems.
4) Location of any overhead or underground power lines and utility easements.
5) The locations and the expected duration of shadow flicker caused by the facility.

C. Engineering

1) Manufacturer's engineering specifications of the tower, turbine and foundation, detailed drawing of electrical components and installation details, and expected sound level production (see Sound Level standards below).
2) For turbines greater than 20 kW of nameplate capacity, an Illinois licensed structural engineer's seal shall be required.
3) All facilities shall be designed to withstand a minimum wind velocity of100 miles per hour, with an impact pressure of 40 pounds per square foot.
4) Each facility shall conform to applicable industry standards, including those of the American National Standards Institute (ANSI). Applicants shall submit certificates of design compliance that equipment manufacturers have obtained

from Underwriters Laboratories (UL), National Renewable Energy Laboratories (NREL), Det Norske Veritas (DNV), Germanischer Lloyd Wind Energie (GL), or an equivalent third party.

D. Soil Studies

Tower-mounted facilities greater than 100 feet total height OR greater than 5,000 lbs. structural weight shall require a soil analysis at base of the tower and a stamped drawing by an Illinois licensed Structural Engineer. Structural weight shall be defined as the tower, wind turbine generator, and any other component(s) otherwise supported by the base foundation.

E. Insurance

Proof of homeowner, farm or business insurance, as appropriate.

F. Electric Utility

Approval letter from the local electric utility company, if the system is to be tied to the energy grid.

G. Installation

Facilities must be installed according to manufacturer specifications. Electrical connections must be made by a licensed electrician.

3.0 ADDITIONAL STANDARDS FOR LARGE AND SMALL WIND ENERGY SYSTEMS

A. Sound Measurement

1) Sound level meters used for measurement must be a Type 2 or better grade per ANSI S1.4 and must have an integrating feature that meets ANSI S1.43. Procedures must meet the applicable portions of ANSI S12.9. Measurements must be made when ground level winds do not exceed 5 mph.

2) Lake County may require, at the owner's expense, field tests or sound propagation modeling, conducted by or supervised by an acoustics specialist certified by the Institute of Noise Control Engineering as may be necessary, to determine whether a violation of said sound regulations is occurring or has occurred. The owner shall promptly remedy any such violations or discontinue operation. See Article 13.9 for Violations and Enforcement.

B. Climb Prevention

The base of any facility tower shall not be climbable for a vertical distance of 15 feet from the base, unless enclosed with an 8 feet tall locked fence. All access doors to large wind facilities shall be locked to prevent unauthorized access.

C. Braking Systems

1) Small wind turbines shall be equipped with automatic and manual braking systems. The owner shall immediately cease operations as reasonably requested.

2) Large wind facilities shall be equipped with a redundant braking system, including both aerodynamic over-speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Stall regulation shall not be considered a sufficient

braking system for over-speed protection. The owner shall immediately cease operations as reasonably requested.

D. Signage

1) Facilities shall have no advertising material, writing, picture, or signage other than warning, turbine tower identification, or manufacturer or ownership information.

2) This prohibition shall include the attachment of any flag, streamers, ribbons, spinners or waving, fluttering or revolving devices, but not including meteorological/weather devices.

3) Small tower-mounted facilities shall have one warning sign that shall include a notice of no trespassing, a warning of high voltage, and the phone number of the owner to call in case of emergency.

4) For large wind facilities, warning signs, no less than four square feet and no greater than six square feet in area, shall be posted at the base of each tower and at access points to the property. The sign shall include a notice of no trespassing, warnings of high voltage and the potential of falling ice, and the phone number of the owner to call in case of emergency.

5) For large wind facilities, each tower shall be marked with a visible identification number to assist with emergency services.

E. Electronic Interference

The determination of degradation of performance and of quality and proper design shall be made in accordance with good engineering practices as defined in the latest principles and standards of the American Institute of Electrical Engineers, the Institute of Radio Engineers and Electrical Industries Association. In case of any conflict between the latest standards and principles of these groups, the precedence in the interpretation of the standards and principles shall be in their order of listing (with the first listed group granted highest priority).

F. Historic Districts and Landmarks

Large facilities within one mile and small facilities within 500 feet of the Local Historic District or Landmark or a National Historic District or Landmark must receive a recommendation from the Historical and Architectural Sites Commission prior to submitting an application to the Plan Commission and Lake County Board.